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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/992,192

11/13/2001

Michael R. Krames

M-11040-3P US

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01/31/2003

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EXAMINER

GUERRERO, MARIA F

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 01/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/992,192

Applicant(s)

KRAMES ET AL.

Examiner

Maria Guerrero

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 15-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7, 9-14 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 8 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/162,708.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This Office Action is in the First Action on the merits.

Claims 1-23 are pending.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 15-19, drawn to a semiconductor device, classified in class 257, subclass 14.
 - II. Claims 1-14 and 20-23, drawn to method of fabricating semiconductor devices, classified in class 438, subclass 22.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process. For example, the III-Nitride layer can be selectively deposited instead of growing.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mark E. Schmidt on June 18, 2002 a provisional election was made without traverse to prosecute the invention of Group II, claims 1-14 and 20-23. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/162,708, filed on September 29, 1998.

Information Disclosure Statement

4. The information disclosure statements (IDS) filed on November 13, 2001 and February 4, 2002 have been considered.

Specification

5. The abstract of the disclosure is objected to because the abstract should not compare the invention with the prior art. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 7, 9-14, and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujii (EP 0743727 A1) (cited by Applicant).

Fujii teaches a method of fabricating a light-emitting device including an III-Nitride quantum well layer (Abstract). Fujii discloses selecting a facet orientation of the III-Nitride quantum well layer and growing the III-Nitride quantum well layer with the selected facet orientation (col. 3, lines 1-5, 44-50, col. 5, lines 40-55, col. 11, lines 40-55). Fujii teaches selectively growing the III-Nitride quantum well layer with an hexagonal crystal structure of basal plane tilted from a (0001) plane by an angle in the range of 0 degree to a few degrees (col. 6, lines 3-50, col. 11, lines 40-55).

Furthermore, Fujii discloses growing a nucleation layer directly on a substrate surface by metal-organic chemical vapor deposition and growing the quantum well layer above the nucleation layer (col. 13, lines 1-25). Fujii teaches the substrate being SiC or GaN (col. 12, lines 53-55). Fujii discloses growing a first semiconductor layer above the substrate, altering an exposed surface of the first semiconductor layer to provide a surface having the selected facet orientation (col. 12, lines 1-47).

Fujii is silent about selecting the facet orientation to control a field strength of a piezoelectric field therein. However, it is inherent that the selection of the facet

orientation control the field strength of a piezoelectric field because the growth orientation of the strained quantum well layer is tilted few degrees from the (0001) direction. Note figures 2A-2B, 3, Abstract.

In addition, Caridi (U.S. 4,952,792) is cited as evidenced to show that Fujii inherently teaches controlling the field strength of the piezoelectric field (col. 3, lines 9-40).

To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Continental Can Co. USA v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991)

Furthermore, the elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Allowable Subject Matter

7. Claims 4-6, 8, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fujii (U.S. 5,742,628) is cited to show that the angle described by Fujii (EP 0743727 A1) is in the range of 0 degrees to 3 degrees (col. 14, lines 40-50). Sun et al. "Piezoelectric Fields in Strained (In, Ga) As/GaAs Multiple-Quantum well Structures Grown on Vicinal (110) GaAs" teaches a study of piezoelectric effects in strained multiple quantum well structures.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 703-305-0162.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 703-308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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December 30, 2002


AMIR ZARABIAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800